



VolumePro 500 Quick Reference

This document provides basic information needed to install a VolumePro 500 card into your computer system.

System Requirements

PC Requirements

- IBM-compatible PC
- 300 MHz Pentium-class microprocessor or faster
- minimum of 256 Mbyte RAM memory
- minimum of 10 Mbyte free disk space to install the VolumePro 500 software
- two unused, adjacent PCI slots, or else one unused PCI slot that has 1.1" of clearance
- graphics accelerator card
- Windows NT V4.0 with service pack 4

PC Recommended Hardware

- 3D graphics board with texture mapping on the AGP port with 30 Mb/second texture download speed or faster and 30 M texels/second texture mapping performance or better

SGI Silicon Graphics Requirements

- SGI Silicon Graphics O2 visual workstation
- minimum of 256 Mbyte RAM memory
- minimum of 10 Mbyte free disk space to install the VolumePro 500 software
- IRIX v.6.5.4 or later
- Compiler CC V 7.3 and cc V 7.3 or later

Note: This release of the VolumePro software has only been tested on the R12000 CPU.

Sun Microsystems Requirements

- Ultra Sparc 30 or better
- 300 MHz Ultra Sparc II or better
- minimum of 256 Mbyte RAM memory
- minimum of 10 Mbyte free disk space to install the VolumePro 500 software
- two unused, adjacent PCI slots, or else one unused PCI slot that has 1.1" of clearance
- graphics accelerator card
- Solaris 2.7
- Compiler CC V5.0

Sun Microsystems System Recommended Hardware

- Elite3D 3m or 6m or Create3D graphics board or better.

Note: See the Release Notes for a current list of compatible graphics cards.

Installing the Board



Caution: The board and its components are sensitive to electrostatic discharge. Make sure you are properly grounded, such as by using an anti-static wrist strap, before installing the board.



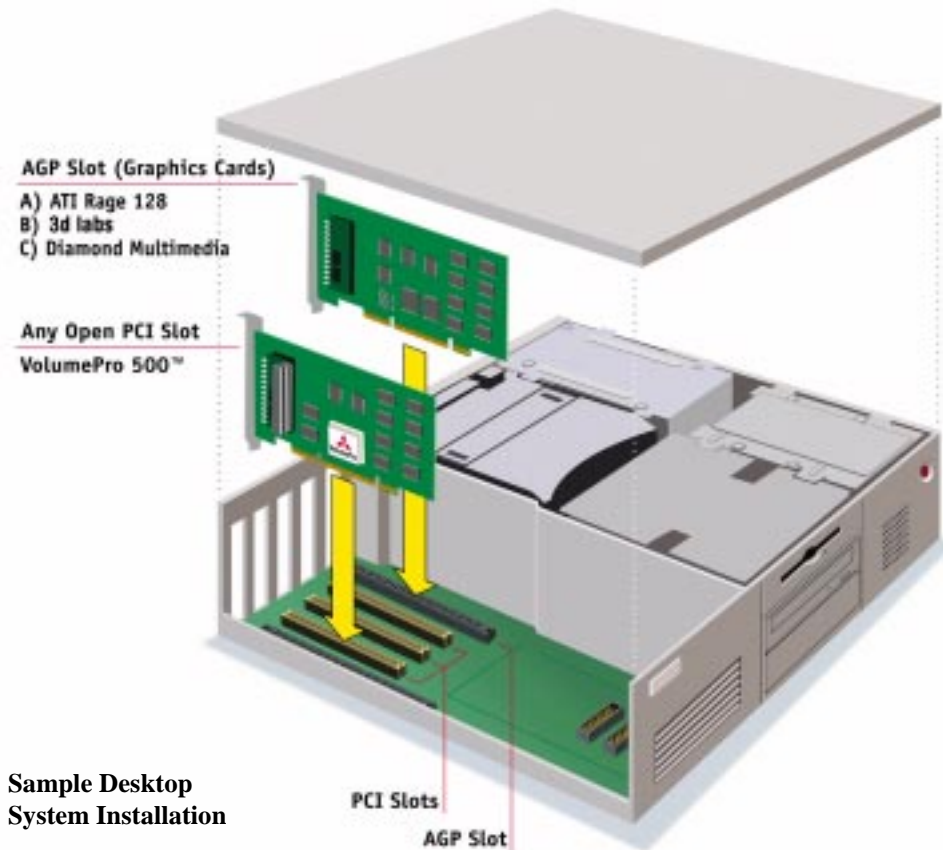
Warning: To avoid electric shock or any damage to the board, power off the computer and all peripheral devices before installing the board.

Installing Board into a Windows NT or Solaris System

Perform the following steps to install the VolumePro 500 board into a PC or Sun system.

1. Save all open files and exit all applications.
2. Turn off power to the computer and to all peripheral devices such as printers, monitors, and any other connected device.
3. Make sure you are properly grounded. An anti-static wrist strap is included with the VolumePro 500 board for this purpose.
4. Remove the cover of the computer according to the instructions in the owner's manual.
5. Select two unused PCI expansion slots OR one PCI slot with 1.1 inches of clearance. Remove the metal slot cover(s).
6. Hold the board by its edges and press firmly into the expansion slot. Check the owner's manual for specific information about installing PCI boards. The figure below is an example of the VolumePro 500 board and a graphics card installed into a computer system. Secure board with the screw used to attach the slot cover.
7. Replace the computer's cover according to the instructions in the owner's manual.

8. Reconnect all cables and turn on power to the computer and peripheral devices.



Installing Board into an IRIX System

The PCI slot in the SGI Silicon Graphics O2 workstation provides 10 watts of power. The VolumePro board allows a maximum of 34 watts. Therefore, **DO NOT INSTALL** the VolumePro board directly into the O2 PCI slot. This may result in damage to the VolumePro board and/or to the O2 workstation. Installing the VolumePro directly into the O2 voids all warranties. You must install the VolumePro board into a PCI expansion chassis. The specific model that we support is:

SBS Technologies, Inc.
 Model 2134
 PCI 4-Slot
 Micro ATX Mini-Tower
 Expansion Unit

Install the VolumePro board and the expansion chassis in the following order, using the installation instructions accompanying the expansion chassis:

1. Install the SBS 2134 Expansion Unit PCI bridge card into the PCI slot in the O2 workstation.
2. Install the VolumePro into one of the PCI slots in the Expansion Unit.
3. Make sure that the VolumePro board I/O plate is fastened securely to the PCI expansion chassis with a screw.
4. Power up the Expansion Unit and verify that the fan for the Expansion Unit and the fan for the VolumePro are working.
5. Boot up the O2 workstation.

Software Installation

NOTE: PLEASE READ THE README.TXT file on the CD-ROM for final additions and corrections.

Installing on Windows NT Systems

You must have administrator privileges in order to install VolumePro onto Windows NT.

1. If an earlier version of VolumePro software is installed on your system, please remove it: go to the **Start** menu, select **Settings**, select **Control Panel**, click on **Add/Remove Programs**, then follow the instructions in the Add/Remove Programs window to remove VolumePro.
2. Insert the VolumePro CD-ROM into the CD-ROM drive of your computer. Go to the **Start** menu, select **Run...**, then type in the CD-ROM drive and program name in the entry box. If the CD-ROM drive is e:, type **e:\Setup.exe**. The installation program will prompt you for user information, configuration choice, destination location, etc. You will have to reboot your computer for the installation to take effect. If there are problems after your reboot, see the README.TXT file on the CD-ROM.
3. The CD-ROM has one demonstration program that must be installed separately. This demo program is located in one of the CD-ROM subdirectories. If the CD-ROM is drive e:, then the installation program for this demo is **e:\AVSDemos\Setup.exe**. Install this program as in the previous step and reboot your computer. The AVSDemos subdirectory has its own README.TXT file. The AVS sample application requires Visual C++ installed to run.

Installing on Solaris Systems

1. You must log in as **root** in order to install the VolumePro software.
2. If an earlier version of VolumePro is installed on your system, please remove it with the following command:


```
%pkgrm VolumePro
```
3. Insert the VolumePro CD-ROM into the CD-ROM drive of your computer. Uncompress the tar file as follows:


```
%tar xvf S27_CC50.tar
      %pkgadd -d ./pkg
```

 Answer **yes** or the default response from **pkgadd**, which installs the VolumePro software.
4. After the VolumePro files have been installed, you must enable the VolumePro board driver by typing the following commands:


```
%rehash
      %loadVG
```
5. Compile and run the sanity program `sanity.cpp` using a sample makefile. The makefile, `sanity.cpp` and sample datasets are in the directory `/usr/doc/VolumePro/test`.
6. To install the AVSDemos application, use the **avs.tar** file in the AVSDemos directory on the CD-ROM, installing it with the **tar** and **pkgadd** commands. AVSDemos runs on Solaris 2.5.1 only.

Installing on IRIX Systems

1. If a previous version of the VolumePro software is installed, please remove it from the system with the following commands:


```
> inst
      remove VolumePro
      go
      quit
```

- Copy the distribution package `vpro_sgi.tar` from CD into a directory, then unpack the distribution with the following command:

```
tar xvf vpro_sgi.tar
```

- Install the package using the following command

```
> inst -f VolumePro
go
quit
```

After installation, the following files are added to the system

```
/usr/lib32/libvli.so.1.0
/usr/lib32/libvli.so (a link to libvli.so.1.0)
/usr/include/vli.h
/var/sysgen/master.d/vg500
/var/sysgen/boot/vg500.o
/var/sysgen/system/vg500.sm
/var/bin/loadVG
/usr/bin/vg500_control
/usr/doc/VolumePro/*.pdf
/usr/doc/volumePro/test/{Makefile, sanity.cpp, sanity_c.c}
/usr/man/man5/vli.man
```

- Load the driver by entering the following commands:

```
rehash
loadVG
```

There should be a message stating the driver is loaded.

- Compile and run the sanity program `sanity.cpp` and `sanity_c.c` using a sample makefile. The makefile, `sanity.cpp` and sample datasets are located in the directory `/usr/doc/VolumePro/test`

Verifying Installation

The program `vliaccept.exe` checks that the installed board is running properly. `vliaccept` creates a rendered image from an input volume dataset and color lookup table file, then compares that image to an existing image file. It also tests the rendering context's cut plane and crop object. By default, `vliaccept` uses data files on the CD-ROM. `vliaccept` is located in the `/usr/bin` directory on Unix systems or the VolumePro `bin` subdirectory on Windows NT systems. To run the program, enter the full pathname of the `vliaccept` program at the Unix or MS-DOS prompt:

```
> c:\Program Files\VolumePro\bin\vliaccept
```

To specify a different location for the data files, use the `-dir` switch and specify a directory. Note that the directory name is followed by a trailing slash:

```
> c:\Program Files\VolumePro\bin\vliaccept -dir c:\data\
```

Note: See the Release Notes for a list of sample applications that run on each platform.

Location of Example Applications on Windows NT Systems

On Windows NT systems, the example applications can be found in the following directories:

Windows NT Default Directory	Description
C:\Program Files\AVSDemos (reach through Start menu)	AVS Inc. demo
C:\Program Files\VolumePro\bin\Revli (reach through Start menu)	RealTime Visualization demo
C:\Program Files\VolumePro\bin\vliaccept	RealTime Visualization demo
C:\Program Files\VolumePro\bin\gfxsanity	RealTime Visualization demo

Some of these programs do not correctly specify the location of the volume dataset files, which are all located in C:\ProgramFiles\VolumePro\data.

VolumePro Subdirectories

The following table lists the location of the VolumePro files. The **Windows NT Subdirectory** column lists the subdirectories of the main VolumePro directory (default C:\Program Files\VolumePro)

Windows NT	Solaris/IRIX	Description
bin	/usr/bin	Contains the VLI executable files and DLLs.
lib	/usr/lib	Contains VLI linking libraries that must be included during link time.
inc	/usr/include	Contains the C++ header files for the VLI software.
doc	/usr/doc	Includes online help, release notes, and PDF files.
data	/usr/doc	Contains sample volume datasets.
examples	/usr/doc	Contains example application programs that use VLI software.

VolumePro Documentation

The user documentation (**/usr/doc** on Unix, VolumePro **doc** subdirectory on Windows NT) includes:

<i>VolumePro Online Help</i>	VolProOnlineHelp.htm
<i>Volume Library Interface Online Help</i>	VLIOnlineHelp.htm or VLIOnlineHelp.chm
<i>Volume Library Interface User's Guide</i>	VLIUsersGuide.pdf
<i>Volume Library Interface Quick Reference</i>	VLIQuikRef.pdf
<i>VolumePro 500 User's Guide</i>	VP500UsersGuide.pdf

The *VolumePro 500 User's Guide* includes troubleshooting information, warranty and license information, and product return information.

View the PDF files with Adobe Acrobat Reader. View the HTMLHelp-based .chm file on Windows NT systems.

Contact Information

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<http://www.rtviz.com> (main web site)
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rtviz@rtviz.com for general issues
support@rtviz.com for technical support

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